

Claims:

1. A recombinant nucleic acid encoding a chimeric transcription factor comprising a p65 domain and a ligand binding domain which is heterologous thereto, wherein the p65 domain comprises part or all of the peptide sequence spanning positions 361 through 550 of a human NF-kB p65, or a peptide sequence derived therefrom.
2. The recombinant nucleic acid of claim 1 wherein the p65 domain comprises part or all of the peptide sequence spanning positions 361 through 450 of human NF-kB p65, or a peptide sequence derived therefrom.
3. The recombinant nucleic acid of claim 1 wherein the the p65 domain comprises part or all of the peptide sequence spanning positions 450 through 550 of human NF-kB p65, or a peptide sequence derived therefrom.
4. ✓ A recombinant nucleic acid encoding a chimeric transcription factor comprising a p65 domain and a ligand binding domain which is heterologous thereto, wherein the p65 domain comprises part or all of the peptide sequence spanning positions 321 through 550 of a human NF-kB p65, or a peptide sequence derived therefrom.
5. ✓ A recombinant nucleic acid encoding a chimeric transcription factor comprising a p65 domain and a ligand binding domain which is heterologous thereto, wherein the p65 domain comprises part or all of the peptide sequence spanning positions 281 through 550 of a human NF-kB p65, or a peptide sequence derived therefrom.
6. The recombinant nucleic acid of any of claims 1 - 5 wherein the encoded chimeric transcription factor further comprises one or more copies of one or more transcription potentiating domains which are heterologous with respect to the p65 domain and which potentiate the transcription activation potency of the transcription factor.
7. The recombinant nucleic acid of claim 6 in which the transcription potentiating domain comprises or is derived from a peptide sequence within the sequence of a transcription activation domain or a transcription potentiating domain.
8. The recombinant nucleic acid of claim 6 in which the transcription potentiating domain comprises or is derived from (a) a p65 motif, ~~or~~ (b) a VP16 V8, VP16 V9, VP16 C, HSF or CTF domain.

9. The recombinant nucleic acid of claim 6 in which the transcription potentiating domain comprises the peptide sequence HSF (406-530).
10. The recombinant nucleic acid of any of claims 1 - 5 wherein the encoded chimeric transcription factor further comprises a DNA binding domain.
11. The recombinant nucleic acid of claim 6 wherein the encoded chimeric transcription factor further comprises a DNA binding domain.
12. The recombinant nucleic acid of any of claims 1 - 5 wherein the ligand binding domain is or is derived from a hormone receptor.
13. The recombinant nucleic acid claim 6 wherein the wherein the ligand binding domain is or is derived from a hormone receptor.
14. The recombinant nucleic acid of claim 12 wherein the hormone receptor is a progesterone or ecdysone receptor.
15. The recombinant nucleic acid of claim 13 wherein the hormone receptor is a progesterone or ecdysone receptor.
16. The recombinant nucleic acid of any of claims 1 - 5 wherein the encoded chimeric transcription factor further comprises a domain comprising or derived from a tetracycline repressor (tetR).
17. The recombinant nucleic acid of claim 6 wherein the encoded chimeric transcription factor further comprises a domain comprising or derived from a tetracycline repressor (tetR).
18. The recombinant nucleic acid of claim 16 wherein the tetR is a mutated tetR which has at least one amino acid substitution, addition or deletion compared to a wild-type tetR.
19. The recombinant nucleic acid of claim 18 wherein the mutated tetR is a mutated Tn10-derived tetR having an amino acid substitution at one or more of amino acid positions 71, 95, 101 and 102.
20. The recombinant nucleic acid of any of claims 1 - 5 wherein the ligand binding domain is or is derived from an immunophilin, cyclophilin or FRAP domain.

21. The recombinant nucleic acid of claim 6 wherein the ligand binding domain is or is derived from an immunophilin, cyclophilin or FRAP domain.
22. The recombinant nucleic acid of any of claims 1-5 which further comprises a stabilizing domain which is heterologous with respect to the p65 domain.
23. The recombinant nucleic acid of claim 22 wherein the stabilizing domain comprises or is derived from a heat shock factor regulatory domain.
24. The recombinant nucleic acid of any of claims 1-5 which further comprises two or more stabilizing domains.
25. The recombinant nucleic acid of any of claims 1 - 5 wherein one or more domains comprise or are derived from a human peptide sequence.
26. The recombinant nucleic acid of claim 6 wherein one or more domains comprise or are derived from a human peptide sequence.
27. The recombinant nucleic acid of any of claims 1 - 5 operatively linked to a transcription control sequence.
28. The recombinant nucleic acid of claim 6 operatively linked to a transcription control sequence.
29. The recombinant nucleic acid of claim 27 wherein the transcription control sequence is selected from the group consisting of: a CMV promoter, an RSV promoter, an MCK enhancer, an SV40 promoter and a retroviral LTR.
30. The recombinant nucleic acid of claim 28 wherein the transcription control sequence is selected from the group consisting of: a CMV promoter, an RSV promoter, an MCK enhancer, an SV40 promoter and a retroviral LTR.
31. ✓ A recombinant nucleic acid encoding a chimeric transcription factor comprising the peptide sequence spanning positions 281 through 550 of a human NF-kB p65, the peptide sequence spanning positions 406-530 of human HSF and ligand binding domain which is heterologous thereto.

32. The recombinant nucleic acid of claim 31 which is operably linked to an RSV promoter.
33. A DNA vector containing a recombinant nucleic acid of any of claims 1 - 5 or 31.
34. A DNA vector containing a recombinant nucleic acid of claim 6.
35. A recombinant virus containing a recombinant nucleic acid of any of claims 1 - 5 or 31.
36. A recombinant virus containing a recombinant nucleic acid of claim 6.
37. A composition comprising a recombinant nucleic acid of any of claims 1 - 5 or 31 and a target gene construct comprising a target gene operably linked to a transcription control sequence recognized by the chimeric transcription factor.
38. A composition comprising a recombinant nucleic acid of claim 6 and a target gene construct comprising a target gene operably linked to a transcription control sequence recognized by the chimeric transcription factor.
39. A method for rendering a cell capable of expressing a target gene in a ligand-dependent manner which comprises transducing the cell with a recombinant nucleic acid of any of claims 1 - 5 or 31 which encodes a chimeric transcription factor which stimulates, in a ligand-dependent manner, the transcription of a target gene operably linked to a transcription control sequence recognized by the chimeric transcription factor.
40. A method for rendering a cell capable of expressing a target gene in a ligand-dependent manner which comprises transducing the cell with a recombinant nucleic acid of claim 6 which encodes a chimeric transcription factor which stimulates, in a ligand-dependent manner, the transcription of a target gene operably linked to a transcription control sequence recognized by the chimeric transcription factor.
41. The method of claim 39 which further comprises transducing the cell with a target gene construct comprising a target gene operably linked to a transcription control sequence which is recognized by the chimeric transcription factor.

42. The method of claim 40 which further comprises transducing the cell with a target gene construct comprising a target gene operably linked to a transcription control sequence which is recognized by the chimeric transcription factor.
43. The method of claim 39 wherein the cell is transduced in vitro.
44. The method of claim 39, wherein the cell is transduced while present within an organism.
45. A cell containing a recombinant nucleic acid encoding a chimeric transcription factor in accordance with any of claims 1 - 5 or 31.
46. A cell containing a recombinant nucleic acid encoding a chimeric transcription factor in accordance with claim 6.
47. The cell of claim 45 which further comprises a target gene operably linked to a transcription control sequence which is responsive to the chimeric transcription factor in the presence of a ligand.
48. The cell of claim 46 which further comprises a target gene operably linked to a transcription control sequence which is responsive to the chimeric transcription factor in the presence of a ligand.
49. A cell containing (a) a recombinant nucleic acid encoding a chimeric transcription factor which comprises a p65 domain, a DNA binding domain and a ligand binding domain comprising or derived from a progesterone receptor domain, and (b) a target gene construct which comprises a target gene operably linked to a transcription control sequence which contains one or more copies of a DNA sequence recognized by the DNA binding domain of the chimeric transcription factor, the cell being capable of expressing its target gene in a ligand-dependent manner, the ligand being progesterone or an analog or mimic thereof.
50. A cell containing (a) a recombinant nucleic acid encoding a chimeric transcription factor which comprises a p65 domain and a tetR domain which binds to a recognized DNA sequence in the presence of its ligand, and (b) a target gene construct which comprises a target gene operably linked to a transcription control sequence which contains one or more copies of a DNA sequence recognized by the tetR domain of the chimeric transcription factor,

the cell being capable of expressing its target gene in a ligand-dependent manner, the ligand being tetracycline, doxycycline or an analog or mimic thereof.

51. A cell containing (a) a recombinant nucleic acid encoding a chimeric transcription factor which comprises a p65 domain and an ecdysone receptor domain capable of binding to a DNA binding protein comprising or derived from the peptide sequence of an RXR protein, and (b) a target gene construct which comprises a target gene operably linked to a transcription control sequence which contains one or more copies of a DNA sequence recognized by the RXR, the cell being capable of expressing its target gene in a ligand-dependent manner, the ligand being ecdysone or an analog or mimic thereof.
52. A non-human organism containing one or more cells of any of claims 49 - 51.
53. A non-human organism containing one or more cells of claim 45.
54. A method for rendering a host organism capable of regulated expression of a target gene which comprises introducing into the organism cells of any of claims 49 - 51.
55. A method for rendering a host organism capable of regulated expression of a target gene which comprises introducing into the organism cells of claim 45.
56. A method for rendering a host organism capable of regulated expression of a target gene which comprises introducing into the organism a recombinant nucleic acid of any of claims 1-5 or 31.
57. A method for rendering a host organism capable of regulated expression of a target gene which comprises introducing into the organism a recombinant nucleic acid of claim 6.
58. A method for rendering a host organism capable of regulated expression of a target gene which comprises introducing into the organism a DNA vector of claim 33.
59. A method for rendering a host organism capable of regulated expression of a target gene which comprises introducing into the organism one or more recombinant viruses of claim 35.

60. A method for stimulating the transcription of a target gene in cells of any of claim 49-51 which comprises exposing the cells to a ligand which binds to the chimeric transcription factor.

61. A method for stimulating the transcription of a target gene in cells of claim 45 which comprises exposing the cells to a ligand which binds to the chimeric transcription factor.

62. A method for stimulating the transcription of a target gene in an organism which comprises administering, to an organism treated in accordance with claim 54, a ligand which binds to the chimeric transcription factor.

63. A method for stimulating the transcription of a target gene in an organism which comprises administering, to an organism treated in accordance with claim 55, a ligand which binds to the chimeric transcription factor.

64. A method for stimulating the transcription of a target gene in an organism which comprises administering, to an organism treated in accordance with claim 56, a ligand which binds to the chimeric transcription factor.

65. A method for stimulating the transcription of a target gene in an organism which comprises administering, to an organism treated in accordance with claim 57, a ligand which binds to the chimeric transcription factor.

66. A method for stimulating the transcription of a target gene in an organism which comprises administering, to an organism treated in accordance with claim 58, a ligand which binds to the chimeric transcription factor.

67. A method for stimulating the transcription of a target gene in an organism which comprises administering, to an organism treated in accordance with claim 59, a ligand which binds to the chimeric transcription factor.